

# Greening the Greyfields in Christchurch

(P4.55)



# Today's Presentation

- ❖ Greening the Greyfields Research
- ❖ Christchurch's context
  - The 2010 / 2011 Earthquakes
  - An emerging resilient city
- ❖ Greening the Greyfields in Christchurch
  - The opportunity to rebuild smarter
  - Supporting communities for a co-designed city

# Greening the Greyfields

## Research Project

- Spatial planning tools (**Envision & ESP**) for better decision-making in urban regeneration
- New set of strategies & tools to support precinct redevelopment

# Greening the Greyfields

## Research Stages

Mod.1) Economic assessment for urban regeneration

Mod.2) Development & Analysis of spatial datasets and parameters determinant for redevelopment

Mod.3) Assessment framework to evaluate environmental, social and economic performance of redevelopment design scenarios (3D visualisation)

Mod.4) Application and trial of Envision and ESP with local communities

# Christchurch's context

## The 2010 / 2011 Earthquakes

- Estimated 75% of residential buildings suffered damage
  - 7.5% collapsed or require demolition
- CBD: 90% of buildings have been demolished





# Christchurch's context

## The 2010 / 2011 Earthquakes

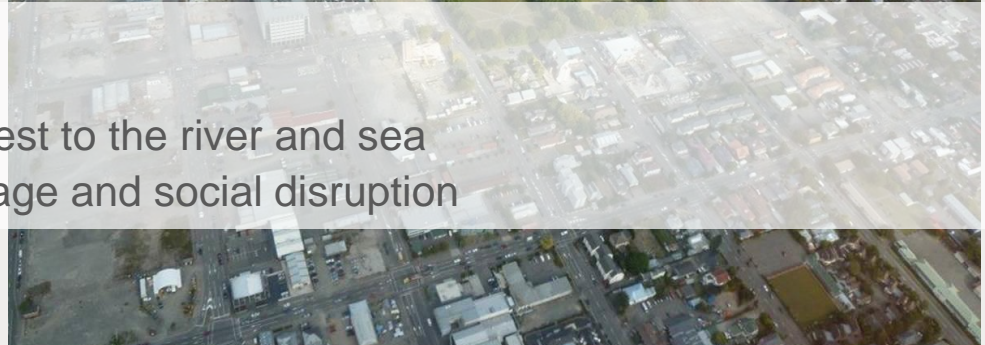


- Most affected areas:
  - Mid-suburban districts closest to the river and sea
  - Severe infrastructural damage and social disruption

Overall Road Damage

- Severe
- Major
- Moderate
- Minor

0 1 2 3  
Kilometers



# Christchurch's context

## The 2010 / 2011 Earthquakes

- Socio-demographic shifts and changing housing demands
  - By 2031 65 years + will nearly double
  - 10 years for the city's population recover to pre-earthquake levels
  - To reduce pressure on greenfield development, the Christchurch City Council
    - *Have* rezoned 9000 households in central Christchurch (medium density)
    - *Are* assessing opportunities for Brownfield redevelopment
    - *Should* consider the Greyfields
- Significant demand pressures on retail, and commercial premises
  - Investors are 40% more optimistic about Christchurch than the rest of NZ

# Christchurch's context

An emerging resilient city

- Major re-construction effort is underway
  - Since Sept 2010 nearly 8,000 building consents issued in Canterbury
  - By 2016 infrastructure reconstruction will have cost \$2 billion
  - Economic growth in Canterbury is currently around 6% p.a.  
(mostly boosted by construction sector)



# Christchurch's context

An emerging resilient city

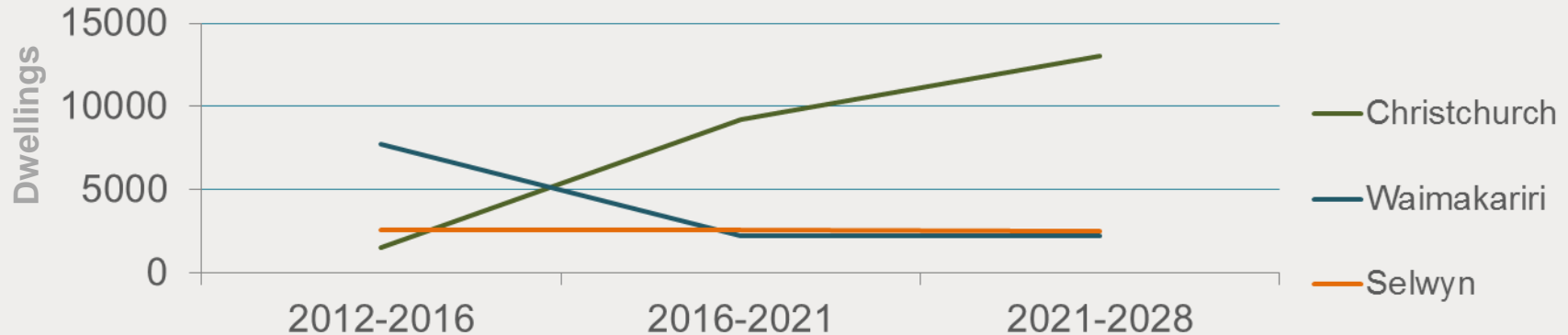
- Strengthened social and economic resilience
  - Recovering business environment:
    - Non-residential building consents in central city remain high
    - Since Sept 2010 – 15,000 *new* businesses in Canterbury region
  - Strong community empowerment and more social events in the city



# Greening the Greyfields in Christchurch

The opportunity to rebuild smarter

- Increasing process of urban intensification in central Christchurch
  - Medium density, urban villages precincts



Source: CERA 2014, Land Use Recovery Plan. Statistics NZ medium growth projections, and Statistics NZ projections for gross housing demand in metropolitan Christchurch and other data

# Greening the Greyfields in Christchurch

The opportunity to rebuild smarter

- *What's in* Envision & ESP for ChCh City Council & other NZ councils
  - Envision
    - Support the processes of urban intensification and urban regeneration
    - Support decision making [ areas of multi-hazard risk, and master planning processes]
    - Enhance community engagement [ raising awareness on regeneration opportunities ]
  - ESP (Envision Scenario Planning )
    - Scenario planning [ environmental impacts, economic feasibility ]
    - Support decision making [ infrastructure, amenities, and community facilities ]
    - Develop business cases [ new forms of urban redevelopment and green solutions ]

# Greening the Greyfields in Christchurch

The opportunity to rebuild smarter

- *What's in Envision & ESP for Developers*
  - Envision
    - Identify best and new investment opportunities in redevelopment areas
    - Support business case for investment funding [ banking and other potential investors ]
  - ESP (Envision Scenario Planning )
    - Enhance confidence in new redevelopment forms [ medium density, mixed uses ]
    - Building consensus with communities in negotiating redevelopment terms
    - Attract new businesses, residents, and investors
    - More competitiveness [ advanced architectural designs, new redevelopment forms ]

# Greening the Greyfields in Christchurch

The opportunity to rebuild smarter

- *What's in* Envision & ESP for Local communities
  - Envision
    - Underpinning cases to councils [ to get support for change, upgrade, or plan in their neighbourhoods ]
    - Understanding why their neighbourhood has been selected for urban regeneration
  - ESP (Envision Scenario Planning )
    - Understanding impacts and benefits of different redevelopment scenarios
    - Enhancing debate on different redevelopment options
    - Enhance awareness about the benefits of advanced design

# Greening the Greyfields in Christchurch

Supporting communities for a co-designed city

- Aspiring for innovative visualisation methods to enhance communication & engagement among stakeholders (Augment Reality)



Street view



3D model visualisation



Immersive/walkthrough visualisation



# Greening the Greyfields in Christchurch

Supporting communities for a co-designed city

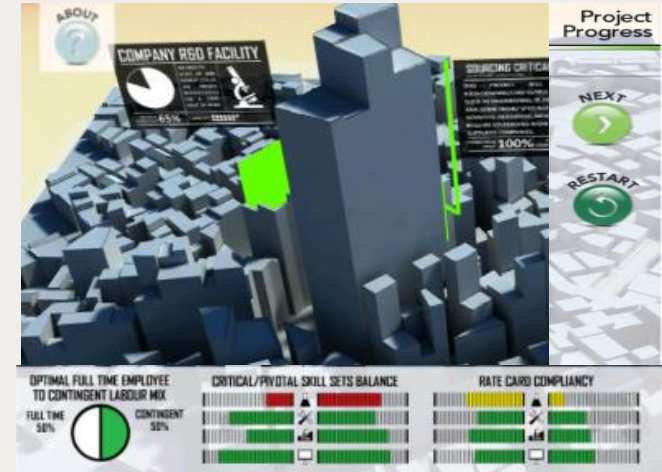
- Accessible user interfaces to promote communication and interaction between stakeholders and spatial planning processes



Geolocated comments



Visualisation of different scenarios



Modelling scenarios

# Progress & Next Steps

- Christchurch's dataset is ready for ENVISION
- Data collection/ treatment for ESP [ BAU Typologies ]
- Key stakeholders are engaged, and a steering group was formed [ CCC, LINZ, MBIE, and NZ Treasury ]
- Assessment of methods to enhance community engagement [ integrating Augmented Reality in ESP ]
- December 2014: Introduction to GtG and Envision to potential stakeholders [ Auckland and Wellington city councils ]

Thank you  
for your attention 😊

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